WHAT IS CLAIMED IS:

1. A method for luminance compensation of liquid crystal display including the following steps:

(1) measuring the original gamma curve of a panel;

(2) setting a target gamma curve;

(3) inputting an initial gray level to obtain the luminance corresponding to the target gamma curve and finding the adjusted gray level for expressing the luminance from the original gamma curve;

(4) repeating (2) and (3) steps to produce plural groups of initial gray levels and plural groups of adjusted gray levels and set the plural groups of adjusted gray levels into a proportion array;

(5) repeating (2), (3), and (4) steps to produce plural groups of proportion arrays from different target curves and make a lookup table;

(6) calculating the quantity distribution of input gray levels of images;

(7) respectively calculating the dark level proportion and the bright level proportion;

(8) selecting a corresponding proportion array according to the value of dark level proportion from the lookup table of dark levels and substituting the adjusted gray level in the proportion array for the input gray level;

(9) selecting a corresponding proportion array according to the value of bright level proportion from the lookup table of bright levels and substituting the adjusted gray level in the proportion array for the input gray level; and

(10) outputting the adjusted gray levels for adjusting the signal intensity to improve the image quality;

whereby the method being able to adjust the input signal intensity and obtain better

image quality.

2. The method for luminance compensation of liquid crystal display as claimed in claim 1, wherein the dark level proportion is the ratio of the gray level quantity in dark level interval to the total gray level quantity, and the range of the dark level interval is from below a specific value in the total gray level range; the bright level proportion is the ratio of the gray level quantity in bright level interval to the total gray quantity, and the range of the bright level interval is from above a specific value in the total gray level range.

3. The method for luminance compensation of liquid crystal display as claimed in claim 2, wherein the range of the dark level interval is the front quarter of the total gray level range; the range of the bright level interval is the rear quarter of the total gray level range.

4. The method for luminance compensation of liquid crystal display as claimed in claim 1, wherein the dark level lookup table consists of a plurality of input gray levels and plural groups of proportion arrays, each input gray level can correspond to an adjusted gray level in proportion array; the bright level lookup consists of a plurality of input gray levels and plural groups of proportion arrays, each input gray level can correspond to an adjusted gray level in proportion array.

5. The method for luminance compensation of liquid crystal display as claimed in claim 1, wherein the corresponding method between dark level proportion and proportion array includes taking the dark level proportion into a dark level transfer function to get a dark level LUT intensity, i.e. dark level LUT intensity=F_1 (dark level proportion), the dark level LUT intensity being corresponded to the proportion array in dark level lookup table, substituting the adjusted gray level in the proportion array for the input gray level; the corresponding method between bright

level proportion and proportion array includes taking the bright level proportion into a bright level transfer function to get a bright level LUT intensity, i.e. bright level LUT intensity=F_2 (bright level proportion), the bright level LUT intensity being corresponded to the proportion array in bright level lookup table, substituting the adjusted gray level in the proportion array for the input gray level.

6. The method for luminance compensation of liquid crystal display as claimed in claim 5, wherein the dark level or the bright level transfer function is a gradually increasing function, i.e. the higher the dark level or the bright level proportion, the larger the dark level or the bright level LUT intensity.

7. The method for luminance compensation of liquid crystal display as claimed in claim 1, wherein the gray levels between the adjusted gray levels are obtained by interpolation.

8. A method for luminance compensation of liquid crystal display including the following steps:

(1) calculating the quantity distribution of input gray levels of images;

(2) respectively calculating the dark level proportion and the bright level proportion;

(3) selecting a corresponding proportion array from the dark level lookup table according to the value of the dark level proportion, and substituting the adjusted gray levels in the proportion array for the input gray levels;

(4) selecting a corresponding proportion array from the bright level lookup table according to the value of the bright level proportion, and substituting the adjusted gray levels in the proportion array for the input gray levels; and

(5) outputting the adjusted gray levels for adjusting the signal intensity to improve the image quality;

whereby the method being able to adjust the intensity of input signals and obtain better image quality.

9. The method for luminance compensation of liquid crystal display as claimed in claim 8, wherein the dark level proportion is the ratio of the gray level quantity in the dark level interval to the total gray level quantity, and the range of the dark level interval is from below a specific value in the total gray level range; the bright level proportion is the ratio of the gray level quantity in the bright level interval to the total gray level quantity, and the range of the bright level interval is from above a specific value in the total gray level range.

10. The method for luminance compensation of liquid crystal display as claimed in claim 9, wherein the range of the dark level interval is the front quarter of the total gray level range; the range of the bright level interval is the rear quarter of the total gray level range.

11. The method for luminance compensation of liquid crystal display as claimed in claim 8, wherein the dark level lookup table consists of a plurality of input gray levels and plural groups of proportion arrays, each input gray level can correspond to an adjusted gray level in the proportion array; the bright level lookup table consists of a plurality of input gray levels and plural groups of proportion arrays, each input gray level can correspond to an adjusted gray level in the proportion array.

12. The method of luminance compensation of liquid crystal display as claimed in claim 8, wherein the corresponding method between the dark level proportion and the proportion array includes: taking the dark level proportion into a dark level transfer function to obtain a dark level LUT intensity, i.e. dark level LUT intensity=F_1 (dark level proportion), the dark level LUT intensity being

corresponded to the proportion array in the dark level lookup table, substituting the adjusted gray levels in the proportion array for the input gray levels; the corresponding method between bright level proportion and the proportion array includes: taking the bright level proportion into a bright level transfer function to get a bright level LUT intensity, i.e. bright level LUT intensity=F_2 (bright level proportion), the bright level LUT intensity being corresponded to the proportion array in the bright level lookup table, substituting the adjusted gray levels in the proportion array for the input gray levels.

13. The method for luminance compensation of liquid crystal display as claimed in claim 12, wherein the dark level, bright level transfer function is a gradually increasing function, i.e. the higher the dark level or the bright level, the larger the dark level or the bright level LUT intensity.

14. The method for luminance compensation of liquid crystal display as claimed in claim 8, wherein the gray levels between the adjusted gray levels are obtained by interpolation.

15. A method for luminance compensation of liquid crystal display including the following steps:

(1) measuring the original gamma curve of a panel;

(2) setting a target gamma curve;

(3) imputing an initial gray level to obtain the luminance corresponding to the target gamma curve, and finding the adjusted gray level for expressing the luminance from the original gamma curve;

(4) repeating (2) and (3) steps to produce plural groups of initial gray levels and plural groups of adjusted gray levels, and combining the plural groups of adjusted gray levels into a proportion array; and

(5) repeating (2),(3), and (4) steps to produce plural groups of proportion arrays and make a lookup table from different target curves;

whereby the method being able to adjust the intensity of the input signals and obtain better image quality.

16. A device for luminance compensation of liquid crystal display including:

A histogram extraction for receiving image signals and counting the quantity distribution of each input gray level to obtain the distribution state of the gray level;

A lookup table storage unit for storing a lookup table; and

A gray level operation unit for calculating the gray level proportion, taking the gray level proportion into a transfer function to get LUT intensity which corresponds to the proportion array in the lookup table, substituting the adjusted gray levels in the proportion array for the input gray levels, and outputting the adjusted gray levels;

whereby the intensity of the input signals being able to be adjusted and better image quality being able to be obtained.

17. The device for luminance compensation of liquid crystal display as claimed in claim 16, wherein the transfer function is a gradually increasing function, i.e. the higher the dark level or the bright level proportion, the larger the LUT intensity.

18. The device for luminance compensation of liquid crystal display as claimed in claim 16, wherein the gray levels between the adjusted gray levels are obtained by interpolation.